



Eye Colour

Michael wonders...

While Michael was filling out the CensusAtSchool questionnaire, he stopped at the question about eye colour and remembered a maths task he had done with his class. In the task he had surveyed the students in his class about their eye colour. He had created a frequency table of the information and drawn a graph of the results. He wondered if all classes would be the same. He then wondered if his class would be a typical Australian class.

When Michael looked back in his book he found the frequency table below.

EYE COLOUR OF STUDENTS IN MICHAEL'S CLASS

Eye Colour	Number of Students
Blue	12
Brown	4
Green	3
Grey	0
Hazel	7
Other	0

He was surprised to find that blue was the most common colour and there were so few with brown eyes

Task One: Is your class the same as Michael's class?

1. Survey the students in your class to find the most common eye colour. Use the table of eye colour (below) for your class and compare it to the table for Michael's class.

EYE COLOUR OF STUDENTS - COMPARING CLASSES

Eye Colour	Michael's Class	My Class
Blue	12	
Brown	4	
Green	3	
Grey	0	
Hazel	7	
Other	0	
Total		

- 2.** How do the classes differ?
- 3.** Draw two different graphs to compare Michael's class to your class. Column graphs, dot plots and pie charts are often used to represent categorical data like eye colour. Comparisons can be made more easily by having both classes on the same column graph, using a different colour for each class.
- 4.** Is it fair to make comparisons between two classes that have different numbers of students? Give reasons for your answers.

Task Two: Is your class a typical Australian class?

- 5.** Go to the CensusAtSchool web site (www.abs.gov.au/censusatschool) and obtain a sample from the [random sampler](#) to carry out your investigation. Make sure the sample size is the same size as your class.
- 6.** Prepare a frequency table to record the eye colour of students in your sample.
(Hint: It will be easier to count the number of students in each category if you sort the data first. If you are good at Excel it will be even easier if you use the [COUNTIF](#) function to do the counting for you)
- 7.** Draw a graph to represent your random sample.
- 8.** Compare the results for your class with the data sample obtained from the Random Sampler.
- 9.** Explain how your random sample differs from your class survey.

- 10.** Comparing the percentage of student eye colour makes more sense when the group sizes are not the same. Fill in the table below with the data from your class, Michael's class and the random sampler. Calculate the fraction and then the percentage.
(Hint: to calculate percentage = eye colour ÷ total x 100)

EYE COLOUR OF STUDENTS - PERCENTAGE									
Eye Colour	My Class	My Class Fraction	My class %	Michael's Class	Michael's Class Fraction	Michael's class %	Random Sampler	Random Sampler Fraction	Random Sampler %
Blue									
Brown									
Green									
Grey									
Hazel									
Other									
Total			100 %			100%			100%

- 11.** Draw a new graph, this time using the percentage of students instead of the number of students.
- 12.** How does the graph using percentage differ from the earlier graph?

13. What is the advantage of using percentage instead of the number of students?

14. Which set of graphs gives the best comparison between the data for the different classes?